

Notice of Allowability	Application No.	Applicant(s)	
	09/833,377	CAHILL, NATHAN D.	
	Examiner	Art Unit	
	Wes Tucker	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 3-10-06.
2. ☒ The allowed claim(s) is/are 2-18, 20-26, 45, 46 and 50-57.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
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DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed March 10th, 2006 has been entered and made of record.
2. Applicant has amended claims 2, 3, 7-14, 20, 21, 45, and 54. New Claims 55-57 have been added. Claims 1, 19, 27-44 and 47-49 have been cancelled. Claims 2-18, 20-26, 45, 46 and 50-57 are now pending.
3. Applicant's remarks in view of the newly presented amendments have been fully considered and are found persuasive. Reasons for allowance are given below.

Allowable Subject Matter

4. Claims 2-18, 20-26, 45, 46 and 50-57 are allowed.

The following is an examiner's statement of reasons for allowance: Applicant has amended the independent claims 14, 45, 54 and added new claim 55 to include the new underlined features as follows in claim 14:

An apparatus for fitting a plurality of sub-populations functions to digital image data, comprising:

means for defining a plurality of collections and a set of bins, each of said collections having an initial set of functions corresponding to different ones of said bins, said functions each having a plurality of function parameters;

means for determining a plurality of fitness values, each of said fitness values
defining a difference between a respective one of said collections and the data;

means for comparing each said fitness value to stopping criteria to determine if
said stopping criteria is satisfied;

means for altering said plurality of function parameters to provide a next
generation of said collections, if said means for comparing determines that said
stopping criteria is not satisfied; and

means for iterating said determining, comparing, and altering steps following said
altering step;

wherein one or more of said iterated altering steps further comprise:
randomly selecting one of said collections of the respective said next generation
and one of said bins;

if the randomly selected bin and one of said functions in the randomly selected
collection correspond, deleting said corresponding function;

if the randomly selected bin has no corresponding function in the randomly
selected collection, adding to the randomly selected collection a new function
corresponding to said randomly selected bin, said new function having one or more
randomly selected function parameters.

In the last Office action, Claims 1-9, 11-22, and 24-26 were rejected under 35
U.S.C. § 103(a) as being unpatentable over [Snyder90] (W. Snyder et al., *Optimal
Thresholding – A New Approach*, Pattern Recognition Letters 11, 1990), in view of
[Neves96] (N. Neves et al., *A Study of a Non-Linear Optimization Problem Using a*

Distributed Genetic Algorithm, International Conference on Parallel Processing, 1996).

The combination of these references read on the claims as previously presented, however the combination of these references does not teach or fairly suggest the newly amended limitations added in the presented amendment. Likewise independent claim 1 has been replaced by new claim 55, which also contains the new limitations added in claim 14. The subsequent dependent claims are also accordingly allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wes Tucker whose telephone number is 571-272-7427. The examiner can normally be reached on 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-2214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wes Tucker

4-28-06



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